UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,203	11/25/2003	Corey A. Salzer	27441.010	6809

36122 7590 10/13/2006

THE OLLILA LAW GROUP LLC
2060 BROADWAY
SUITE 300
BOULDER, CO 80302

EXAMINER	
KIM, PAUL D	

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,203	SALZER, COREY A.	
	Examiner	Art Unit	
	Paul D. Kim	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *13-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is a response to the reconsideration filed on 9/27/2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US PAT. 5,293,025) in view of Nagasaka et al. (US PAT. 5,562,973), and further in view of Higson (US PAT. 6,083,366)

Wang teaches a process of making a multilayer circuit comprising steps of: providing a substrate; printing conductive paste on the substrate to form a plurality of electrode regions; depositing an electrical insulation to cover one of the electrode regions; ablating the electrical insulation with a laser to form an array of pores through the electrical insulation to the conductive ink in the one electrode region; and depositing conductor material with into the pores to form an array of electrodes in the one electrode region as shown in Fig. 3 (see col. 4, lines 38 to 58).

However, Wang fails to teach whether the conductor material deposited into the pores is a metal or not. Nagasaka et al. teach a process of multi-layer wiring board including a process of forming pores (5) through an insulating layer (11) to a conductive wiring layer (4) on a substrate (7) and filling the pores with a metal material (such as Ag

or Ag-Pd alloy) in order to form an inner (2) or outer (4) wiring conductor lines as shown in Fig. 1 (see also col. 3, line 64 to col. 4, line 59). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the conductor material deposited into the pores of Wang by filling the pores with metal as taught by Nagasaka et al. in order to form wiring conductor lines for electrically connecting the surface wiring conductors and the inner conductors.

In addition, Wang, modified by Nagasaka et al., fails to teach a sonically ablating process for forming the array of the pores. Higson teaches a process of making a sensor comprising a process of sonically ablating an electrical insulation to form an array of pores through an electrical insulation to the conductive paste in order to form a plurality of micro-pores. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify producing array of pores by a laser of Wang, modified by Nagasaka et al., by sonically ablating process as taught by Higson in order to form a plurality of micro-pores.

As per claims 2-7, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the metallic material as recited in the claimed invention because Applicant has not disclosed that the metallic material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Nagasaka et al. because the metallic material as recited in the claimed invention would perform equally well such as electrically connecting the surface wiring

conductors and the inner conductors in Nagasaka et al. Therefore, it would have been an obvious matter of design choice to modify the metallic material of Nagasaka et al. to obtain the invention as specified in claims 2-7.

As per claim 8 Nagasaka et al. also teach that layers of different metals are deposited into the pores such as a first metal layer (5a) is made of Ag-Pd having a relatively low Pd content and a second metal layer (5b) is made of Ag-Pd having a relatively high Pd content in order to improve an adhesion for electrically connecting the surface wiring conductors and the inner conductors as shown in Fig. 3 (see also col. 5, line 33-52).

As per claims 9 and 10, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the layers of different metallic materials as recited in the claimed invention because Applicant has not disclosed that the metallic material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Nagasaka et al. (see also col. 6,lines 25 and 26) because the layers of different metallic materials as recited in the claimed invention would perform equally well such as electrically connecting the surface wiring conductors and the inner conductors in Nagasaka et al. Therefore, it would have been an obvious matter of design choice to modify the metallic material of Nagasaka et al. to obtain the invention as specified in claims 9 and 10.

3. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Nagasaka et al. and Higson, and further in view of Hall et al. (US PAT. 4,242,379).

Wang, modified by Nagasaka et al. and Higson, teaches all of the limitations as set forth above except to treat the metal with thiol. Hall et al. teach an acid inhibitor including a process of treating a metal with a chemical solution such as a thiol (as per claim 12) in order to prevent corrosion (see also col. 2, lines 55-61). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the metallic material of Wang, modified by Nagasaka et al. and Higson, by treating the metal with a thiol in order to prevent corrosion.

Response to Arguments

4. Applicant's arguments filed 9/27/2006 have been fully considered but they are not persuasive. Applicant argues that the prior art of record, Higson, uses conductive organic polymer instead of metal. However, examiner indicated that Nagasaka et al. teach a metal to fill pores in order to electrically connect the surface wiring conductors and the inner conductors. Also, applicant argues that the filled holes of Wang are not electrode so that the holes in Wang don't form an array of electrodes. Examiner traverses the argument. The holes of Wang are filled with conductor material for metallization. The conductor material is used for electrically connecting two conductive layers, which is equivalent with an electrode. Applicant argues that filling the hole with metal is completely different than creating array of electrodes by filling an array of pores

with metal. However, examiner traverses the argument that there are not difference between filling the hole with metallic material and filling an array of pores with metallic material. The array of pores can be read such as a group or a certain arrangement of pores or holes.

NOTE: Definition for **array:** a regular and imposing grouping or arrangement.

Conclusion

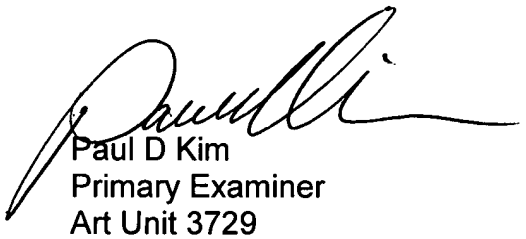
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Thursday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul D Kim
Primary Examiner
Art Unit 3729